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THE INNOVATIVE CAPACITY OF A TERRITORY IN BEHAVIORAL ASSESSMENTS OF ITS POPULATION[1]

The paper provides a rationale for substantive and formalized definition of a territory's capacity, outlines its innovative component in the unity of "subject/process/object-oriented" approach to its substantive content and performance assessment. It elaborates a system of mechanisms and institutions to build the innovative capacity of regions and territories, outlines the most effective areas of its use for spatial socioeconomic development. The paper also defines priority problems that require solutions and can ensure the increasing performance of a territory. These problems and variants of their solutions featured in the discussions held at the Gaidar International Economic Forum in Moscow (2015) and the 12th Krasnoyarsk Economic Forum, as demonstrated in this paper by the analysis of some presentations made at the forums. The paper shows the change in priorities of global innovative development in the second half of the 20th and early 21st century. It examines and provides the summary of research and practices in the area of using the innovative solutions for developing individual teams and territories, making a spatial arrangement of regions and the Russian Federation as a whole. The development of a territory and its capacity depends on many factors; however, elevating the role of knowledge, intellectual resources and involving the population in the governance process by developing and implementing various programs and projects play an increasing role in the current environment. The paper analyzes positive aspects of using the business projects as the primary mechanism for implementing the programs and plans involving the market institutions and public-private partnership (PPP). It assesses the role of teams and population in boosting the innovative activities and systemic development of territories.

Keywords: territory's capacity, region, development, space, knowledge, innovative capacity, its substance, structure, program and project planning, public-private partnership (PPP), its role in the systemic development of territories, management of innovative capacity

Amid systemic globalization of national economies, most economic reforms in Russia (building the knowledge economy, creating the information society, expanding the innovative space) are diverted from the federal to the regional and municipal levels. In this connection, it is not enough to establish the theoretical foundation and outline socially relevant development priorities at the federal level, it is essential to specify and update the traditional approaches to the use of institutions and mechanisms for coordinating the innovation policy of the Russian federal center with the opportunities and conditions (federal, mutually beneficial, planned or market-based, and others) for participation of regions and territories in the implementation of federal priorities. We discuss the issue of expanding the boundaries of substantive content in the innovative development processes of economic entities, providing a rationale for criteria to evaluate the effectiveness of divergent strategic priorities (programs, projects) in the development of territories that operate at the different levels and have varying capabilities.

The Content of Innovative Capacity of a Territory and Problems of Its Rational Use

As a starting point for the theory of innovative development of territories, we propose to use the content of territory's capacity, opportunities for its innovative replenishment and renewal, as well as the most systemically important areas of its use by authorities, businesses, and the population of the territory. Traditionally, it is assumed that the capacity for innovative development of a territory may be defined as an integrated set of natural geographic, financial, economic, social, psychological,

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political, scientific, educational resources and opportunities for creating and using the innovations in a particular territory; the willingness of business community and the authorities in the territory to quickly introduce the advanced designs, innovative products, services, and technologies in the manufacturing and management activities; the willingness of government authorities, businesses, and the population of the territory to perceive and flexibly respond to innovative impulses from internal and external environments while quickly adapting to the new economic and management conditions [1].

Today, the capacity of a territory, like on all other levels of the market economy, is increasingly determined by the level of its innovation component (i.e., the ability of the market agent—in accordance with the needs of global and domestic markets—to use in an innovative way and with increasing efficiency all available resources and opportunities within the territory (natural, infrastructure, labor, historical, industrial, scientific, educational, and other) for the benefit of systemic development of the territory and its population on an extended basis). The realization of emerging pattern in the global and national market development requires clarifying the concept of "territory's capacity."

The concept of "territory's capacity" is an extensive and dynamic category. We see its main characteristics, first, in systemic unification and connection of all subjects within a territorial entity and highlighting those that are innovation-active, engaged in innovation and generating innovative ideas and solutions. The greater the number of innovation-active businesses (large, medium, small, individual, state, municipal, and foreign) operating in the territory, the more developed their cooperation links and relations with scientific and creative organizations involved in development, renewal, and use of innovative solutions, the higher the development capacity of a territory under otherwise equal conditions. The innovation-oriented organizational events (regional, interregional, territorial) in the form of exhibitions, contests, and conferences on innovative development of the territory, the use of best practices and their organizational, technical, and technological transplantation into the current system make a positive impact on the innovative development of territories and regions. One the one hand, with an appropriate organization, such events motivate the population (especially, its most active part) for innovation-oriented style of thinking and behavior, particularly in the workplace and manufacturing teams. On the other hand, such initiatives are inevitably joined by individual proponents and entire organizations from neighboring territories, thus strengthening the diffusion of innovative ideas and solutions in the regional space and Russia as a whole. By producing a synergistic effect, such events are transformed into real centers for generating innovative solutions and accelerated systemic renewal of manufacturing, technological, organizational, and administrative foundations of the Russian economy based on advance science [2-9].

Second, the innovative level of territory's capacity is determined not only and not so much by the number of its innovation-oriented population as by its ability to initiate and implement in the manufacturing and/or organizational and management processes (with a reasonable "orchestration" of these processes by the government authorities) new solutions and ideas that are more sought after by the market (in terms of price, quality, design, cost-effectiveness, demand). In essence, the implementation of innovative ideas and scientific developments in real production, infrastructure, organizational, and managerial processes is the most relevant problem for Russian realities.

Before the 1917 revolution, the existence of this problem was blamed on conservative and inconsistent policies of the Russian government. In Soviet times, it was blamed on political dictate of the Communist Party and the bureaucracy of the State Planning Committee, although no one denies that the innovative development has been the most successful and effective exactly during the Soviet times [10, p. 724]. After 1992, everything was blamed on specialization of the Russian economy in raw materials and the absence of "smart government" capable—in cooperation with science and the public—not only to generate a program for creating a "smart Russian economy" but also to convince the population of its reality with specific implementation projects. Only on this condition, most of the Russian people can be involved in the consistent implementation of innovative programs and projects across the Russian Federation as their active participants and agents [11, p. 19-25].

Unfortunately, the repeated calls made by some Russian leaders to build a "smart economy" are usually accompanied by not particularly smart decisions on constant reforms of general and higher education, reducing the number of schools and universities, raising the load of professors and teachers, excluding from education programs on economic specialties the entire range of subjects and topics that are essential for today's professionals (the theory of markets, competition, market economy

institutions, foundations of pricing, and other). The pseudoreformation of the Russian Academy of Sciences, budget constraints imposed on the regions and municipalities, the cuts in social items of the federal budget also make a negative impact on the innovation activities of people.[2]

The above problems became the subject of discussions at the Gaidar International Economic Forum in Moscow (2015) and the representative 12th Krasnoyarsk Economic Forum, which examined at the highest scientific level a wide range of issues in the area of innovative development of the Russian economy amid international sanctions and restrictions. The participants of these forums have unanimously admitted that the practice of appeals to build a "smart economy" and to turn the knowledge economy into a decisive factor and a source of socioeconomic development and growth of people's wellbeing is unlikely to change the situation without the real action by the government, ministries, regions, and municipalities. There is a need for serious, scientifically sound and publicly acceptable program and project solutions for innovative renewal of the economy, restoration and re-industrialization of manufacturing and agricultural sectors, accelerated and high-quality development of manufacturing and social infrastructure both nationwide and in individual regions. If the implementation of these decisions will be seamlessly linked to the growth of incomes (salaries, pensions, allowances, and stipends) for all categories of participants in the innovative development and at all levels of existing governance hierarchy, not just for senior officials and members of parliament, the positive outcomes of the "smart economy" can be considered as granted.

The participants in the discussion "Russia and the World: A New Vector" held during the Gaidar Forum have spoken about three problems that continue to constrain the innovative development of the Russian economy by restricting the activities of population and businesses:[3]

— Inconsistency of the Russian leaders in implementing the course to create an Innovation Economy by ensuring the conditions for increased activities of all participants in the innovation process (Anatoly Chubais)

— Passivity of Russian businesses, which continue to rely only on the state and its support, including in terms of providing a comprehensive funding for scientific research (Igor Agamirzyan)

— Absence of favorable political, social, organizational, financial, motivational atmosphere around intellectual work and processes of technological renewal of the economy (It is necessary to minimize the regulation of the innovation and technology sector only to evaluation of its performance. It was proposed to develop and implement a set of government measures aimed at creating a positive public image of scientists and entrepreneurs, because this is "far more relevant than the investments, support of industries, or state development institutions," said Igor Agamirzyan, CEO of Russian Venture Company.)

Alexander Auzan claimed at the Krasnoyarsk forum that the current model of the Russian socioeconomic development exhausted itself: "It is impossible to further grow by relying on raw materials sector and domestic demand. The objective is not to add and dilute the oil and gas sector by "something else" but to find a similarly significant competitive advantage. Our advantage is the brains. We need to facilitate their retention in the country by establishing the appropriate infrastructure institutions and investing in human capital" [12, p. 3]. We need to build and put to the service of Russia and its people the innovative capacity and resource opportunities not only in words but also with real actions, without restricting or humiliating by "clownish reforms" the people who are engaged in them.

According to estimates by international rating agencies, the human capital and talents as its foundation are a key factor of innovative development, particularly in terms of building breakthrough technologies, increasing competitive advantages, and sustainable growth in Russia. In terms of enhancing and improving its international ranking in this area, the Russian Federation rose in 2014 from 51st to 26th place, ahead of Kazakhstan (37th), Ukraine (31st), Greece (40th), Italy (36th), Turkey (68th), and Israel (29th).

Our highest ranks are in the area of availability of education—from the 1st to 14th place. Our lowest ranks are in the quality of education (73rd place), public health (81st), percentage of working

[2] Ye. M. Primakov. The Most Important Problem of Economic Policy // Rossiyskaya Gazeta, 2014, No.112 (5/21/2014), p. 10 (In Russian).; Merge and fire. The Ministry of Finance proposes a return to optimizing the education, health, and culture / A. Voronov, A. Chernykh, V. Visloguzov, D. Butrin, V. Khamraev // Kommersant, 2015. No. 72 (4/24/2015) p.1, 3 (In Russian).

[3] Ye. M. Primakov, Op. cit. p. 6.

age population (82nd), professional development (79th), and unemployment (52nd).[4] The authors of the study explain that healthy life expectancy in a country is determined by the person's ability for physical and mental work until the age of about 61. If this indicator for the Russian population were not lower, it would be possible to compete with other countries.

Some noteworthy proposals and recommendations have been made when discussing the problem of building a new model with a priority of accelerated innovative development:

— A rationale was provided (by M. Kotyukov, V. Fortov) for the task to "effectively combine the capacity of research and university teams" to create competitive education programs that will build the necessary competencies for research organizations and re-industrialized economy.

— The reasons have been provided for substantial restructuring of scientific research, R&D, as well as existing production processes with the development of platform-based technologies and their market launch to transform them into a market resource (L. Ogorodova, A. Ponomarev).

— As part of integrating academic, applied, and university science, it was proposed to "bet on building an entrepreneurial, technological ecosystem around the universities" (Ye. Kuznetsov, A. Volkov) which, on the one hand, will allow for a more active formation of entrepreneurial and innovation skills and competencies among the students. On the other hand, forming a belt of small science-intensive organizations will allow significantly strengthening the innovation and entrepreneurial activities of the Russian people in the territories and expanding their cooperative ties with other territories and actors of innovation.

— It was suggested to use more actively scientific and educational potential of regions and territories for innovative development of Russia while paying particular attention to the development of the Arctic area of the Russian Federation. The first meeting of the Polar Commission under the Government of the Krasnoyarsk Krai, which approved a number of recommendations and appeals to the Russian leadership was held as part of the Krasnoyarsk forum. It was proposed to intensify the geological exploration in the Arctic area by engaging the experts from neighboring territories, to consider the possibility of giving the status of "priority development territories" to individual territories in the Arctic and Subarctic areas, to actively develop transport and social infrastructure by taking into account special conditions of developed territories.

— The participants in the forum paid particular attention to discussing the mechanisms and institutions of the spatial arrangement of the Russian Federation and improving the quality of life for all categories of the Russian people. It was recognized that the most useful measure would be the dedicated integration of efforts by all levels of government and businesses through the institutions of public-private partnership (PPP), concessions, public tenders for government programs and projects, etc.

Third, the current stage of socioeconomic development is characterized by the instability of external and internal environments, increasing competition among market agents, reduction in the life cycle of goods and services. The general trend of the world economic development is aimed at priority development of new industrialization, the defining vector of which is increasingly becoming a systemic renewal and building of high-tech industries both within the national economies and at the level of individual, mainly industrialized, regions and territories [14, p. 195-200]. In terms of its most well-known attributes, the Russian high-tech status can be defined as the one that is "catching up" but, according to a number of experts, remains within the technological mainstream [2, 15].

In these conditions, the innovative capacity of regions and territories begins largely to depend on their readiness, together with businesses, scientific and educational institutions located in the region, to join the implementation of national and/or regional priorities of innovative renewal and restoration of industry on a new technological, organizational, and innovative basis. The innovative capacity in these conditions is developed in two areas. On the one hand, the conditions are created in the territories for the full implementation of innovative ideas and solutions in the process of fulfilling the nation-wide priorities. The intraterritorial and interterritorial cooperation and integration of innovation-oriented entities is further strengthening, space for the diffusion of new and updated knowledge is expanding. The innovation activity of the population and organizational-institutional orientation of the activities of territorial authorities and administration aimed at optimal coordination of the population's activity in the direction that is necessary for the territory is increasing.

[4] A. Vozdvizhenskaya. Places happen. Russia jumped by 25 positions in the ranking of human capital development // Rossiyskaya Gazeta, 2015. No. 101 (5/14/2015) p. 15 (in Russian).

On the other hand, there is an expansion of investment, budget, and credit opportunities to improve the innovation status of territories and achieve a higher level of the interterritorial competitiveness. This is exactly where we see the essential mission of the territories' innovative capacity.

The competition viewed as the ability of regions and municipalities to create, productively use, and retain through constant renewal the existing advantages is destined to become a permanent engine for systemic development of the Russian space through innovation and new knowledge. Traditionally, there are three areas of activities that allow maintaining a high level of competitiveness of territories: availability of marketable resources in the territory and their sustainable use for systemic development and improvement of wellbeing of the resident population; manufacturing, infrastructural and other businesses, educational, scientific, and other budgetary institutions operating in the territory; population of the territory, its composition and qualitative characteristics, employment structure and effectiveness (productivity) of the employed population. While the above-mentioned areas for improving the competitiveness of regions and territories are important, the innovation, knowledge, and quality of human resources are becoming today a source for manufacturing, social, and entire spatial development of the Russian Federation that is turning to its "full capacity."

Fourth, to allow the innovation capacity of a territory to fully realize its potential, it is necessary to create a comprehensive political, macroeconomic, scientific, educational, social, and motivational environment that is favorable for the territory, businesses, and population. Addressing the lawmakers of the Russian Federation, the President of the Russian Federation Vladimir Putin said: "...To determine what to do, we need to understand the reasons or genesis of the events that happened. These reasons include, of course, the external ones, but primarily these are the internal reasons in the form of economic imbalances when the growth of labor remuneration starts to outpace the productivity, and the inflation caused by the sanctions reduces the domestic demand of population and businesses for goods and services."[5] The public statements made by the Russian president unequivocally voiced the demands to release the businesses, population, and territories from unnecessary obligations and audits, to promote their development in the direction that is needed by society, while increasing socioeconomic and sociopolitical rankings of Russia in the world community.

According to the classics, the market economy is a special system of economic management. Adam Smith described it, on the one hand, as the system of economic management that is based on a free choice made by each member of the society with regard to the area and status of his/her labor or production activities. Indeed, the market freedom of the man from all forms of extra-economic coercion allows evaluating it as the most democratic and humane, especially when compared with the slave and feudal systems. On the other hand, the market system, more than any other economic system, is based on the pragmatism of economic calculation where the "expenses must be repaid" by revenues and/or other sources of income. Any deviation from this rule severely punishes the market participants through bankruptcy, ruin, or loss of employment—and always through the loss of reputation. It is no accident that Adam Smith viewed the market-based society as a "society of economically (and we would add, innovatively) prepared people" [24. p. 442-443]. These are people who aim to create and maintain an innovative environment for their production and/or state activities focused on increasing the final economic output. In an extremely figurative way, the market atmosphere in society was expressed by Alexander Pushkin in his novel "Eugene Onegin":[6]

...our deep economist had got
the gift of recognizing what
a nation's wealth is, what augments it,
and how a country lives, and why
it needs no gold if a supply
of simple product supplements it.

From this point of view, the market economy is often viewed as the most complex and, at the same time, a rigid system of economic management, which places high demands on its participants, particularly on its active subjects, such as entrepreneurs and organizers of reproduction processes. The list of conditions that are mandatory for a sustainable and successful conduct of business includes: a) the ability to objectively assess the market situation in the country and the world when

[5] V. Putin, Speech at a meeting with lawmakers // Izvestia, 2015. No. 75 (4/28/2015) p. 2 (in Russian).

[6] A. S. Pushkin, Eugene Onegin (translation by Charles H. Johnston), Penguin Books Ltd, Hannondsworth, Middlesex, England, this translation was first published in 1977.

adopting a commercial (production, marketing, investment, etc.) decision, which can affect the fate of the entrepreneur. Such ability is possessed by the people who are not only talented but also have a special training; b) the ability to professionally organize and ensure, independently and/or through hired managers, the sustainable development of the business by timely decisions made under the influence of changing market conjuncture; c) the ability to be receptive to constant innovation-based renewal and to make a search for innovative solutions a priority for business development; d) ability to fully develop and improve the innovative capacity of the company by developing the cooperation, integration, and collaboration with scientific, educational institutions, and companies in the region, country, and the world community; d) ability to engage and fully contribute to retaining the talented experts and workers who are innovatively focused on development.

The history of building and developing a market-based system of economic management gives many examples of how positively a sociopolitical and macroeconomic environment can affect the innovation processes at all levels of reproduction, which objectively takes into account the needs and capabilities of development, emerging risks, and expected outcomes that can be obtained both by every participant in the innovation process and society as a whole. However, the global and Russian experiences also include the opposite examples when previously successful countries have become outsiders in innovative development. It is noteworthy that the estimates and ratings provided by different experts and agencies often differ and contradict each other. It appears that the reason for that is the dynamic and contradictory nature of the innovation process in different countries and regions, and the impact made on it by a multitude of circumstances. The table below shows the change in priorities of global innovative development in the second half of the 20th century.

Table

Dynamics of Innovation Priorities in the Development of World Economy in the Second Half of the 20th and Early 21st Century [16, p. 145]

Innovation priority	Change of priority in 1970—1980	Change of priority in 1981—1990	Change of priority in 1991—2000
Research and education	Research in high-tech sectors	Higher education	Research and educational centers
Technological development of regions	Production development of regions	Innovative regions	Developing regions
Development and implementation of innovation	Innovative development of individual cycles in the production process	Secondary industries	Diffusion of knowledge and interaction
Systemic renewal of production	Organizational and technological innovation	Technological breakthrough	Creating an innovative product
Spatial innovation	High-tech clusters	Technology parks, city-regions	Innovative agglomerations
Innovative space	Optimization of production costs	Cost savings	Interrelation of industries

This gradation of innovative development priorities proposed by the authors gives quite a few reasons for contesting and clarifying it. At the same time, the materials provided in the table allow affirming that the Soviet Union, and later the Russian Federation, overall, fitted into the global trend of innovative development (albeit with some lag) until early 1990s. The problem of the Russian innovation system was and still remains an exceedingly slow implementation of innovative ideas and creation of new products, technologies, technical and technological industries on their basis. This is especially true of civil industries involved in the production of consumer goods. It is not by chance that, in their assessment of innovative development of the Russian Federation, the international rating agencies note, on the one side, the unsatisfactory indicators for the Global Innovation Index (GII), where Russia was ranked 49th out of 143 countries surveyed in 2014. In terms of the share of innovative products and the dynamics of their production by Russian enterprises, as well as the share of fundamentally innovative goods, Russia lags far behind the industrially developed countries, including China. Overall, the Russians, too, give a negative assessment of this growing lag by their country. According to sociological surveys [17, p. 29], more than half of the respondents share the opinion that Russia is increasingly lagging behind developed countries in terms of implementing the innovation in the

manufacturing processes, and almost 2/3 of respondents negatively assess the level of implementing the technological innovation in the everyday life of the Russian people.

On the other hand, in the same GII ranking, Russia has rather high indicators for human capital quality (30th rank) and for the development of knowledge and technology (34th rank). Russia has considerable opportunities to further enhance its innovation activities. For example, only in 2014, Russia has increased its ranking in terms of human capital quality by 25 basis points.[7] In their creative characteristics, Russians are not behind and, in some ways, they even surpass the representatives of other countries. In many respects, the young Russians outdo their peers from more developed countries in terms of their ability to find nonstandard solutions and in creativity in general. In our view, a further intensification of these processes with the subsequent systemic improvement in all indicators of innovative development is constrained by declining indicators of creative activities (72nd rank), imperfect institutions (88th rank), extremely slow development of the domestic market both as a result of dropping demand and the limited offer of innovative domestically produced goods.

A major problem for the improvement of territories' innovative capacity that constrains the innovative development of the Russian economy as well as the economy of its regions, territories, and companies remains a weak motivational activity of the population both at the level of individual enterprises and companies and in the Russian space as a whole [19, p. 14—19]. The reasons cited for the weak innovation activities of businesses and Russian population include the dependence on raw materials, inadequate legal regulation, which is especially defective with regard to the formation and innovative use of depreciation funds, the absence of incentives for innovation among leaders and participants at all levels, and some other.

We have already voiced proposals to increase the stimulating influence of government authorities and business executives in terms of improving the motivation of all participants in the innovation process and at all of its levels:

1) We propose that special attention be given to enhancing the role of top decision makers (owners and managers) and businesses in their innovative development through preferential lending, subsidizing the implementation of innovative projects, government guarantees, etc. It is important that the top decision makers of private and state-owned (with state participation) companies become the generators of innovative development that captivate the teams, subcontractors, partners, scientific and educational centers.

2) The innovation activities by employees of private enterprises and companies (with state participation) largely depend not so much on the financial and moral incentives but rather on social and psychological environment in the team, corporate culture, and corporate patriotism of all employees. But even all this is often not enough.

3) To ensure that a local innovative spirit "crosses the gates of the company" and enters the Russian space, we need a corresponding social, political, organizational, and innovation environment defined by high quality and comprehensive economic focus, and we also need to train the specialists for the innovation economy; full-fledged science (fundamental and sectoral); national, regional, and municipal leadership that understands the situation and is ready for the innovative development of the country; and some other components.

Not until these measures become a priority can both the Russian economy and the innovation opportunities of the territories be free from hostage to dependence on raw materials. This was most eloquently illustrated by a survey conducted among the participants of the Krasnoyarsk International Economic Forum (2012). Responding to a question asked by the moderator Sergey Aleksashenko "What is holding back the implementation of innovation?", almost 63 percent of participants replied: "We do not need innovation. We can live by using raw material resources." It is indicative that the forum gathered mostly the representatives of managerial and business elite. Such an attitude to the innovative renewal of the Russian economy speaks volumes. And this is not particularly welcome news for Russia with its vast resource, intellectual, human, educational capacity and spatial opportunities for sustainable development.

[7] A. Vozdvizhenskaya, Places happen. Russia jumped by 25 positions in the ranking of human capital development // Rossiyskaya Gazeta, 2015. No. 101 (5/14/2015) p. 15 (in Russian).

Priority Areas for the Implementation of Territories' Innovative Capacity

By defining the concept of "territory's capacity," assessing the growing importance of its innovation component, and identifying continuing innovation failures in production, organizational, managerial, scientific, and educational activities, we tried to draw attention of the Russian public to the existing opportunities of systemic development and determine the priority development areas. We understand the systemic development focused on achieving a socially meaningful outcome as such type (model, variant, or scenario) of sustainable and socially oriented reproduction of the gross national product that fully involves all government authorities, financial, manufacturing, and other companies of various forms of ownership and specializations, and the majority of the Russian people.

The systemic utilization of the territories' capacity for innovation-based renewal and expanded reproduction of the municipal gross product [11, pp. 19-25] requires solving other problems, which can ensure the increasing performance of the territory. The following problems are mentioned among those that have a priority and require prompt solutions [1-9, 14, 15]:

1. It is necessary to develop—at a high scientific level—a national theory of innovative development of the Russian Federation (the theory of innovative development of the Russian Federation), which could become a scientific program of innovation-based renewal and development for the Russian economy with its particular characteristics, national traditions, and mentality of the leadership and entire population. It would be a mistake to argue that similar attempts have not been made or are not made by Russian scientists. We can name a number of papers which, to a varying degree, can qualify—both by their format and, more importantly, by their content—to be a prototype (first version) of the innovative development theory. Among them, we would like to mention specifically the paper prepared by a team of Russian and foreign authors specializing in different knowledge areas, under the general editorship of the corresponding member of RAS Boris Milner "Innovative Development: Economy, Intellectual Resources, Knowledge Management" [3]. The team of authors includes 28 leading experts in different areas of the innovative development theory.

Boris Milner is a recognized expert on issues of innovation management; Valery Makarov, an Academician of RAS, on the knowledge economy; Vladimir Mayevsky, an Academician of RAS, on the theory of innovative development evolution; Alexander Dynkin and Natalia Ivanova, academicians of RAS, on global innovation challenges and innovation policy of the Russian Federation; Boris Kuzyk, an Academician of RAS, is an expert on technological and infrastructure areas of innovative development; Georgy Kleiner, a corresponding member of RAS, is one of the leading researchers on problems of innovative development of companies and enterprises; Boris Porfiryev, a corresponding member of RAS, studies the possible natural and climate risks and implications of constraints on or unprepared implementation of innovative solutions. The leading experts from the Haas School of Business at University of California, Berkeley (USA), offered their recommendations to increase the intellectual resources and intellectual capacity of the society through development of market models and their productive use by the companies [3].

While giving an overall positive assessment of this paper, we consider it necessary to mention its weaknesses. Essentially, there was no serious scientific study of opportunities for innovative development of regions and municipalities that according to most researchers can qualify for increasing participation in the innovation-based renewal of the economy and its transition to more advanced technological structures [2; 8]. This gap in the research is particularly relevant today amid the introduction of anti-Russian sanctions and evolving processes of import substitution, in which a growing role has to be played by regions and municipalities.

As an indicator of intensifying search for a model to theoretically define the patterns of innovative development for countries with transitional economies, we can consider the following papers on innovation issues qualifying for a special theoretical and methodological status: "Innovation Paradigm for the 21st Century" [4]; "Innovation Policy: Russia and the World in 2002—2010" [21]; "Investing in Innovation: Problems and Trends" [20]; "Innovative Management in Russia: Issues of Strategic Management and Scientific and Technological Security" [5]; "Synergy of Space: Regional Innovation Systems, Clusters and Flows of Knowledge" [8]; and many others that are no less interesting and useful to the researcher.

2. Building a fully-fledged innovative economy functioning at all levels implies the creation of a fully-fledged innovation system, to the effective work of which should be connected rank-and-file employees, managers at all levels, government officials, and top decision-makers in municipalities,

regions, and the Federation. As Irina Tsapenko and Maksim Yuryevich note: "It is very revealing that Russia, which holds 43rd position in the World Bank ranking in the knowledge index, ranks much lower in the knowledge economy index (55th)." In the opinion of authors that—that we fully share—such a lag "can be explained by our substantial lag in the index of economic incentives and institutional regime (117th rank out of 145 countries), which shows the absence of adequate environment (and, as a consequence, innovation-oriented behavior of the working population, A. T., K. N.) for the development of the knowledge economy"[6, p. 600].

With the growing desire to turn the vector of social development from increasing the production and export of raw material resources to active and systematic use of innovation factors of economic growth to address manufacturing, social, infrastructural, and environmental problems, it is necessary to build and fine-tune the innovation system at all levels of economic management—from the federal level through the regional and municipal levels and down to every individual entrepreneur and resident. Those who argue that the Russian Federation has no national innovation system, and it needs building from scratch do not even try to see what has already been accomplished. We must admit that Russia has a functioning innovation system, however, it works inefficiently and not at all levels for a variety of reasons.

The true state of the national innovation system in the Russian Federation can be described as a median state between the two extremes mentioned above. There is a framework of the system in the form of a number of federal and regional laws, programs for innovation-based renewal and innovative economic development of the country, region, individual territories, and enterprises. The development strategies have been elaborated and are apparently in effect (however, they are implemented strictly only when it comes to the annual rise of prices and tariffs for goods and services of state-owned corporations). It is also true that the said regulatory documents are usually elaborated "behind the scene" without the involvement of scientific community, and therefore, they are adopted without public debate in the format of "wishful thinking" by the officials, who had their innovative illumination, through a law or program aimed at "full and immediate" innovation-based renewal of the entire economy to propel the country to prosperous heights of the knowledge and skills-based economy.

The development of the Russian Federation during almost a quarter of a century showed and proved that neither the innovative system nor innovative capacity can be built with the "wishful thinking." The adopted legislative norms create a legal framework for the national system. At the same time, the organizational structures, which are mandated by law to engage in research (fundamental and applied), research capacity of universities, venture capital firms and companies, innovation centers (technological parks, technopoles, technology platforms, etc.) can become the institutional framework of national, regional, and territorial systems.

We see the problem in the lack of desire and professional skills required for bringing the innovative system up to the working state and configure them for a full-fledged functioning. In our view, to ensure that innovative systems work at all levels, it is necessary, first, to connect the entire vertical of the power in the Russian Federation, business community, scientific and educational organizations and institutions, and the majority of the Russian people to this process. The forms of engagement as well as the motivation of innovation activities can and should be different and individualized depending on the labor functions of each category of participants: heads of government bodies and municipalities; state-owned companies and private firms; large, medium, and small businesses; rank-and-file workers [19]. In our opinion, the prolonged systemic implementation of this proposal is behind the main reasons of permanent failures in the functioning of national, regional, territorial, and local systems of innovation. These systems should be directed toward the innovative development and increasing its capacity.

Second, it is necessary to accelerate the solution of the issue with regard to the integration of academic, university, and applied science with venture capital and manufacturing companies and firms to reduce the cycle "fundamental idea — design based on this idea — prototype — serial manufacturing of the new product." The prolonged transition of innovative knowledge from an idea to its industrial development persists as a result of many organizational constraints. In particular, there is no special government body authorized on behalf of the state to initiate, coordinate, and guide for the achievement of the meaningful result all participants involved in the innovation process, such as state-owned and private companies, regions, municipalities, and the population. Both the world practice and the

practice of the Soviet Union showed and proved that innovative development should be carried out professionally and on a continuous basis by relying on scientific community rather than breaking its research traditions with meaningless reforms and limited funding.

It is naive to hope that this problem can be addressed by the Russian Ministry of Education and Science. As demonstrated by almost 25-year-old practice, it specializes rather in the processes of destroying the education systems created in Soviet times and, in recent years, even the systems created by the Russian Academy of Sciences. This office is not accustomed to a constructive endeavor. We need a special State Committee on Science and Innovative Development headed by the deputy prime minister, or even better by the first deputy prime minister, and authorized to ensure the institutional support for the increasingly innovative level of socioeconomic and overall social development of the Russian Federation.

3. The sustainable functioning of national innovation system must be supported by the qualified personnel that is capable—amid the increasing globalization and competitive struggle for manufacturing leadership and financial orchestration of the global development among the countries, individual regions, and territories—to manage social processes and develop the domestic production based on advanced and breakthrough economic and managerial decisions. According to Adam Smith, the market economy can develop in a sustainable and effective way only in societies of economically literate and, we would add, innovatively trained people. These people should be focused on creating and maintaining state and production activities for increasing final economic (social, environmental, and infrastructure) output [23, pp. 9-33].

In our opinion, a fundamental and publicly meaningful decision in implementing this priority would be the termination by the leadership of the country of unprepared and overwhelmingly unpopular "games" in the area of reforming the educational systems (general and higher) with almost complete elimination of secondary vocational education system. The health care system has been definitely split into two unequal parts: the one that is accessible to all but offers a minimum amount and low quality of services; and the one for the elite with a full list of paid medical services and, therefore, unaffordable for the majority of the Russian people as it has evolved into a commercial sphere of activities.

In the process of "shock privatization," a large part of industry and design institutes has been assigned new functions; in the RAS system, the research activities are continuously restricted for the most ridiculous and flimsy reasons. The real causes are two: lowering the burden on the budgets of all levels by restricting the funding of budgetary areas and using these "savings" to compensate for the decisions and actions taken at all levels of the government by the executives who are deeply indifferent to whether there will be any innovation in Russia. Their main motivation is to have a good standing with superiors and keep their positions that provide a decent pay (which by many times exceeds the average salary in Russia), free access to public services, and many other things not available to the majority of Russian people. For example, in 2012—2014, the salary of federal officials increased from 170 thousand rubles to 420 thousand rubles per month with all extended benefits (almost by 2.5 times), while the national average salary grew from 27 thousand rubles to 32 thousand rubles per month (i.e., less than by 12 percent) [19, s. 12].

One can accept the increased salary of officials amid growing macroeconomic indicators: improvement in the living standards of the population, effective economic development, lower corruption. But there is not a single country indicator that Russia could be proud of. Ironically, the only exceptions are the number of officials and budget expenditure to keep them. For example, in 1985, in the Soviet Union with its planned economy that required additional administrative effort, there was one official for every 115 residents; in 2010, the figure was one for every 58 residents. This means that over a quarter of a century the bureaucracy has almost doubled. All this happened amid liberal market slogans that "the market will regulate everything." Over these years, the expenses on maintaining the state apparatus increased from 0.8 percent of all budgetary expenditure to 14 percent [23, s. 1]. An impressive difference, is it not? It looks like there is someone who should be asked some tough questions! Recently, one feels a desire to ask such questions more often and make them even tougher. For example, why the people's wallets are emptied with an increasing speed? Just in the past 12 years, the tariffs on gas in Russia jumped up by 10 times; on water, by 14 times; on utilities, by 16 times; on electricity, by 7 times. The people are concerned that the authorities condone over the rising prices on food and essential goods, the poor quality of education, and health care. One can ask a lot of such questions but, unfortunately, we did not receive any clear answers and were unlikely to get them.

4. The innovation process configured for the growing public outcome can operate in an effective and sustainable way on two conditions. On the one hand, by relying on public opinion, it should be constantly adjusted under the influence of changing (external and internal) conditions and targets set for socioeconomic and public development. Such adjustments allow infusing new energy into the innovation process and improve its efficiency ratio by minimizing the "routine" operations. On the other hand, the innovation process, if it is aimed at socially meaningful result, is intended to function as a two-way road: the innovation priority in the form of strategy or federal program with a list of organizational and macroeconomic mechanisms and institutions, which facilitate their implementation, is communicated to those who specifically do the job. We discussed above the forms of communicating such conditions: the state order for companies with state participation and/or the competitive placement of state orders in the regions that can mobilize the regional businesses and its population for a consistent, successful, and effective implementation of the federal priority.

At the same time, the workers and teams should put forward their own initiatives and proposals (projects and commitments) that must be taken for execution or connected to the implementation of the program by creating (supporting, respecting) the conditions required for its performance. Such social contract may not be made out officially, but it is meant to be the link that will allow organically combining the initiative and enterprise of people and businesses with the constitutional obligation of the country's leadership and numerous officials to channel this energy of the population in the direction required for achieving the general wellbeing.

This process can be designed as a national program and project plan for innovation-based renewal of production and building a knowledge-based economy. The national plan can allocate the funds for 12—15 federal programs of priority innovative development of the Russian society. These should include a program of systematic innovative education for the specialists through the renewed system of general and higher education; restoring to working condition the academic and applied science with a mandatory solution for the issue of the establishing their supervising government agency. The industry, regional, and territorial priorities can be defined and clarified following the results of a tender. We consider it fundamentally important to support the programs and projects with financial and credit resources. In essence, this is a matter of investing in the innovation-based renewal of the Russian space and entering new levels of development.

The problem for the sustainable development of the Russian Federation is not only an over-length implementation of new ideas and solutions in the production processes but also the limited investment capabilities of the state. This problem has many different causes—at least, the Russian government officials explain it by sanctions, increasing capital outflow, offshore "heavens," high interest rates, flaws of legislation in terms of depreciation funds, and so on and so forth. It is difficult and useless to argue with such explanations because these factors do really and substantially constrain the investment activities in Russia. However, there is another explanation for the growing shortage of investment in the Russian economy—that is, the reluctance of government officials to seek and find domestic investment resources and regulate and control more strictly their intended and effective use. The investment is not just the money, it is "fuel" necessary for the development of the economy. Without it, the economy simply cannot move forward much less to ensure the expanded reproduction.

The rates of socioeconomic and entire public development in Russia primarily depend on the availability of investment and its scientifically justified allocation by priorities and breakthrough areas and strict control over its use. Both according to the Constitution and to one's conscience, the government is obliged to seek and find the investments instead of whining that there is no investment and "everyone will have to tighten their belts," thus demonstrating publicly its lack of professionalism. The key note in the speeches of all Russian ministers at the Gaidar Forum (January 2015) was the reduction of investment, slower growth, and limiting the social commitments to the population.

Many experts voice the opinion that the investment opportunities in the Russian economy are not nearly as "deplorable" as viewed by the ministers. We can refer to the opinion of Abel Aganbegyan, an Academician of RAS and recognized authority in economics. According to his estimates, "the assets of the Russian banks represent about 60 trillion rubles—the largest "money bag" in the country—and by 2.5 times exceed the entire consolidated budget with state funds." The practice of recent years showed that only about 2 percent of these assets is used for investment in the socioeconomic development. In the world, there is no other example of such a low investment share in the domestic economy. In all countries, the share of investment loans by domestic banks stays at the level of 8 percent. In developed

countries, it is 30—50 percent. According to Abel Aganbegyan, "our Central Bank is sitting on gold reserves by spending it on everything else ($135 billion spent over the year), except the investment and economic growth."[8] With such investment passivity of the Russian banking system and government officials, the Russian innovation economy will have to endure for a long time an "innovative diet" in anticipation of a brighter future.

A prepared draft national innovation program and project plan supported by investments must be submitted for public discussion, and only after its approval by the people, it can be considered by the Legislative Assembly and approved by the president of the Russian Federation.

It would be sensible to make sure that each program is supervised by a member of the Russian government with a small staff of those responsible for that area of activities who will regularly monitor the progress of its implementation and make timely and necessary adjustments. Each program should have several project-based implementation areas. Depending on their level, these areas can be industry-specific, related to research and innovation, regional, territorial, or local. The party responsible for performing the project should be determined following a tender (industry-wide, regional, territorial, local). The practice shows that, as the main mechanism for implementing the projects, it would be most appropriate to use business projects developed and implemented on the basis of public-private partnership (PPP). First, it allows combining with a single document the organizational capabilities of government authorities with entrepreneurial resources of businesses and the population. Second, it will significantly improve the quality of business projects, reduce the time and costs of their implementation. Third, it will reduce the burden on the budgets of all levels because under certain conditions, the businesses can assume 40 percent or more of the costs related to the implementation of the project. Fourth, it will strengthen the public control over the implementation of the project and its social outcome by including into the council on implementation of business projects the representatives of social organizations and associations, continuous monitoring of performance, and public discussion of its results.

We can discuss for a long time the pros and cons of each approach (national, regional, territorial, local) to the forms and methods of improving the innovation activity of Russian society and building its truly "smart" economy and achieve little by doing this. However, if we gradually without hurrying start to bring the national innovation system to the working condition by restoring on an innovative basis the system of education, health care, and science; if without seeking political gain but supporting this work with heart and soul, we personally and by our own example start to connect to the innovation process the larger part of resources and the Russian people; if all together we do not allow certain categories of "our" citizens to "grabitize" the results of public activities, we will succeed in everything.

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References

1. F. B. Barlybaev. Potentsial innovatsionnogo razvitiya territorii: metodika issledovaniya i napravleniya effektivnoy realizatsii [The capacity of territory's innovative development: research methods and areas of effective implementation]. *Upravlenie ekonomicheskimi sistemami [Management of economic systems].* Available at: http://www.uecs.ru/logistical/item/384-2011-04-04-09-03-17 (date of access: 5/29/2013).

2. Tatarkin, A. I., Romanova, O. A. & Akberdina, V. V. (2014). *Promyshlennost industrialnogo regiona. Potentsial, prioritety i dinamika ekonomiko-tekhnologicheskogo razvitiya [The Industry of Industrial Region. Capacity, Priorities and Dynamics of Economic and Technological Development].* Ekaterinburg: Institute of Economics UB RAS Publ., 632.

3. Milner, B. Z. (Ed.). (2009). *Innovatsionnoye razvitie. Ekonomika, intellektualnyye resursy, upravlenie znaniyami [Innovative development. Economics, intellectual resources, knowledge management].* Moscow: Infra-M Pub., 624. (Nauchnaya mysl [Scientific thought].).

4. Ivanov, V. V. (2011). *Innovatsionnaya paradigma — XXI [Innovative paradigm — 21].* Ros. akad. nauk [The Russian Academy of Sciences]. Moscow: Nauka Publ., 239.

5. Makarov, V. L., Varshavskiy, A. E. et al. (2004). *Innovatsionnyy menedzhment v Rossii. Voprosy strategicheskogo upravleniya i nauchno-tekhnologicheskoy bezopasnosti [Innovation management in Russia: the issues of strategic management and scientific and technological security].* Moscow: Nauka Publ., 880.

6. Tsapenko, I. P. & Yurevich, M. A. (2014). Rabotniki znaniy. Kakuyu rol oni igrayut v sovremennoy ekonomike [Knowledge workers. What role do they play in the modern economy?]. *Vestnik Rossiyskoy akademii nauk [Bulletin of the Russian Academy of Sciences], 84(7),* 590-600.

[8] A. G. Aganbegyan, The Year of a Hungry King, an interview with A. Chuikov // Argumenty Nedeli, 2015. No. 3 (1/29/2015) p. 3 (in Russian).

7. Sukhovey, A. F. & Golova, I. M. (2015). Prioritety sovremennogo innovatsionnogo razvitiya za rubezhom i v Rossii [Priorities of modern innovative development abroad and in Russia]. *Zhurnal ekonomicheskoy teorii [Journal of economic theory], 2.*

8. Pilyasov, A. N. (Ed.). (2012). *Sinergiya prostranstva: regionalnyye innovatsionnyye sistemy, klastery i peretoki znaniy [The Synergy of space: regional innovation systems, clusters, and flows of knowledge].* Smolensk: Oykumena Publ., 760.

9. Bodrunov, S. D. (2015). *Integratsiya proizvodstva, nauki i obrazovaniya i reindustrializatsiya rossiyskoy ekonomiki. Materialy Mezhdunarodnogo kongressa «Vozrozhdenie proizvodstva, nauki i obrazovaniya v Rossii: vyzovy i resheniya» [Integration of manufacturing, science, education and re-industrialization of the Russian economy. Proceedings of the International Congress "The Revival of Manufacturing, Science and Education in Russia: Challenges and Solutions"].* Moscow: Lenand Publ. 464.

10. Lvov, S. D. (Ed.). (2004). *Rossiya v globaliziruyushchemsya mire. Politiko-ekonomicheskie ocherki [Russia in the globalizing world. Political and economic essays].* Moscow: Nauka Publ., 740.

11. Tatarkin, A. I. & Nekrasov, A. A. (2014). Teoretiko-metodologicheskie podkhody k otsenke gorodov-millionnikov. Rol mestnogo soobshchestva [Theoretical and methodological approaches to evaluating million-plus. Role of local community]. *Upravlenets [The manager], 1,* 19-25.

12. Kolesova, O. (2015). Pered perestroykoy. Nauke utochneny novyye reformy [Before perestroika. New Reforms are specified for the science]. *Poisk [The search], 10,* 3.

13. Stepankov, V. (2015). V borbe s baryerami. Chto meshaet razvitiyu innovatsionnoy ekonomiki [Combating barriers: what hinders the development of innovative economy]. *Poisk [The search], 4-5,* 6.

14. Akberdina, V. V., Romanova, O. A. & Tatarkin, A. I. (2014). Formirovanie vysokotekhnologichnogo sektora v industrialnom regione [Development of hi-tech sector in the industrial region]. *Zhurnal novoy ekonomicheskoy assotsiatsii [Journal of the new economic association], 2,* 195-200.

15. Benediktov, M. A. & Frolov, I. E. (2007). *Vysokotekhnologichnyy sektor promyshlennosti Rossii: sostoyanie, tendentsii, mekhanizmy innovatsionnogo razvitiya [The high-tech industry sector in Russia: state, tendencies, mechanisms of innovative development].* Moscow: Nauka Publ., 583.

16. Fratesi, U. & Senn, L. (2009). *Growth and Innovation of Competitive Regions: the Role of Internal and External Connections.* Springer-Verlag Berlin Heidelberg, 368.

17. Zarubina, N. N. (2015). Innovatsionnoye razvitie Rossii v tsivilizovannom i institutsionalnom kontekste [Innovative development of Russia in the civilization and institutional context]. *Mir Rossii. Sotsiologiya. Etnologiya [World of Russia. Sociology. Ethnology], 2,* 28-49.

18. Titov, D. (2015). Chinovniki otsenili svoyu antikrizisnuyu rabotu vysoko, biznes—inache [Officials highly rated their anti-crisis work, while businesses did otherwise]. *Ekonomika i zhizn [Economics and life], 17,* 1-2.

19. Tatarkin, A. I. (2014). Innovatsionnyy vektor rossiyskoy ekonomiki: povedencheskaya gotovnost naseleniya [Innovation vector of the Russian economy: behavioural willingness of the population]. *Materialy 4-y Mezhdunarodnoy nauchno-prakticheskoy konferentsii «Shumpeterovskie chteniya» [Proceedings of the 4th International Scientific and Practical Conference "Shumpeterovsky Readings"].* Perm: PNIPU Publ., 10-21.

20. Mindeli, L. E., Chernykh, S. I., Ivanova, N. I. et al. (2011). *Investitsii v innovatsii: problemy i tendentsii [Investing in innovations: problems and trends].* In: L. E. Mindeli (Ed.). Moscow: In-t problem razvitiya nauki RAN Publ., 224.

21. Ivanova, N. I. & Ivanov, V. V. (Eds). (2011). *Innovatsionnaya politika. Rossiya i mir: 2002-2010 [Innovation policy. Russia and the world: 2002-2010].* Moscow: Nauka Publ., 451.

22. Tatarkin, A. I. (2014). Dialektika gosudarstvennogo i rynochnogo regulirovaniya sotsialno-ekonomicheskogo razvitiya regionov i munitsipalitetov [Dialectic of the state and market regulation of socio-economic development of regions and municipalities]. *Ekonomika regiona [Economy of region], 1,* 9-33.

23. Denisov, D. (2014). Tsifr perebor [Too many figures]. Biznes-zhurnal [Business journal], 8, 1.

24. Smith, A. (2009). *Issledovanie o prirode i prichinakh bogatstva narodov [An inquiry into the nature and causes of the wealth of nations].* Perevod s angl.; predisl. V. S. Afanasyeva [Trans. from English, preface by Afanasyeva V. S.]. Moscow: Eksmo Publ., 960. (Antologiya ekonomicheskoy mysli [Anthology of economic thought]).

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